

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Katsumi MORIKAWA et al

Confirmation No.: 1756

Application No.: 10/569,006

Group Art Unit: 3752

Filed: February 21, 2006

Attorney Docket No: 7620-X06-005

For: IMMERSION NOZZLE FOR CONTINUOUS CASTING OF STEEL AND CONTINUOUS
STEEL CASTING METHOD USING SAME

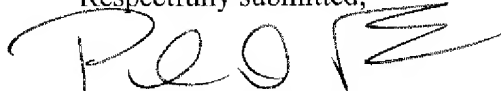
REQUEST FOR CORRECTION OF FILING RECEIPT

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313

Sir:

The above-identified patent application's title on the Filing Receipt mailed June 14, 2006 is not correct. Please correct the Filing Receipt as indicated on the enclosed marked-up copy. Specifically, the title should be IMMERSION NOZZLE FOR CONTINUOUS CASTING OF STEEL AND CONTINUOUS STEEL CASTING METHOD USING SAME, not "IMMERSION NOZZLE FOR CONTINUOUS CASTING OF STEEL AND METHOD FOR CONTINUOUS STEEL CASTING OF STEEL USING THE IMMERSION NOZZLE". Enclosed are copies of the Transmittal form, the first page of the Patent Application and the as-executed declaration showing that this is a USPTO error. Accordingly, no fee is believed to be due for this Request. However, please charge any fee to Deposit Account 500601 (Atty. Docket 7620-X06-005).

Respectfully submitted,



Paul D. Bianco, Reg. # 43,500

Enclosures

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APPL NO.	FILING OR 371 (c) DATE	ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	DRAWINGS	TOT CLMS	IND CLMS
10/569,006	02/21/2006	3752	900	7620-X06-005	3	13	2

CONFIRMATION NO. 1756

27317
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FILING RECEIPT

OC000000019126877

Date Mailed: 06/14/2006

Receipt is acknowledged of this regular Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please mail to the Commissioner for Patents P.O. Box 1450 Alexandria Va 22313-1450. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections (if appropriate).**

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Power of Attorney: The patent practitioners associated with Customer Number 27317.

Domestic Priority data as claimed by applicant

This application is a 371 of PCT/JP04/12079 08/23/2004

Foreign Applications

JAPAN 2003-298232 08/22/2003

If Required, Foreign Filing License Granted: 06/05/2006

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US10/569,006**

Projected Publication Date: 09/14/2006

Non-Publication Request: No

Early Publication Request: No

COPY**Title**

Immersion Nozzle for continuous casting of steel and continuous steel casting method using same

~~Immersion nozzle for continuous casting of steel and method for continuous steel casting of steel using the immersion nozzle~~**Preliminary Class**

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PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4158).

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PTO-1390 (Rev. 07-2005)

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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**TRANSMITTAL LETTER TO THE UNITED STATES
DESIGNATED/ELECTED OFFICE (DO/EO/US)
CONCERNING A SUBMISSION UNDER 35 U.S.C. 371**

ATTORNEY'S DOCKET NUMBER

7620-X06-005

U.S. APPLICATION NO. (If known, see 37 CFR 1.5)

INTERNATIONAL APPLICATION NO.

PCT/JP2004/012079

INTERNATIONAL FILING DATE

23 August 2004

PRIORITY DATE CLAIMED

22 August 2003

TITLE OF INVENTION

IMMERSION NOZZLE FOR CONTINUOUS CASTING OF STEEL AND CONTINUOUS STEEL CASTING METHOD USING SAME

APPLICANT(S) FOR DO/EO/US

Katsumi MORIKAWA, Joki YOSHITOMI, Keisuke ASANO and Saeko UCHIDA

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a submission under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a submission under 35 U.S.C. 371.
3. ☒ This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (21) indicated below.
4. ☐ The US has been elected (Article 31).
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
 - a. ☐ is attached hereto (required only if not communicated by the International Bureau).
 - b. ☒ has been communicated by the International Bureau.
 - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☒ An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)).
 - a. ☒ is attached hereto.
 - b. ☐ has been previously submitted under 35 U.S.C. 154(d)(4).
7. ☒ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
 - a. ☐ are attached hereto (required only if not communicated by the International Bureau).
 - b. ☐ have been communicated by the International Bureau.
 - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
 - d. ☒ have not been made and will not be made.
8. ☐ An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☒ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. ☐ An English language translation of the annexes of the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11 to 20 below concern document(s) or information included:

11. ☒ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☒ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☒ A preliminary amendment.
14. ☐ An Application Data Sheet under 37 CFR 1.76.
15. ☐ A substitute specification.
16. ☐ A power of attorney and/or change of address letter.
17. ☐ A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 37 CFR 1.821-1.825.
18. ☐ A second copy of the published International Application under 35 U.S.C. 154(d)(4).
19. ☐ A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4).

This collection of information is required by 37 CFR 1.414 and 1.491-1.492. The information is required to obtain or retain a benefit by the public, which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 15 minutes to complete, including gathering information, preparing, and submitting the completed form to the USPTO. Time will vary depending upon the complexity of the information.

IMMERSION NOZZLE FOR CONTINUOUS CASTING OF STEEL AND CONTINUOUS STEEL CASTING METHOD USING SAME

TECHNICAL FIELD

The present invention relates to a casting nozzle for use with a molten steel vessel, such as ladle or tundish, in a process for continuous casting of molten steel, and more specifically to a continuous casting nozzle comprising a combination of an upper nozzle, a sliding nozzle, an intermediate nozzle, a lower nozzle and a submerged or immersion nozzle. In particular, the present invention relates to an immersion nozzle suitable for continuous casting of clean steel, and a method for continuous casting of clean steel, using the immersion nozzle.

BACKGROUND ART

In a process for continuous casting of aluminum-killed steel, when molten steel is deoxidized by the addition of aluminum, Al_2O_3 -based inclusions formed in the molten steel adhere and build up onto an inner wall surface of a casting nozzle to cause a nozzle clogging phenomenon where an inner bore diameter of the nozzle is gradually reduced.

This nozzle clogging phenomenon leads directly to shortening of a usable life of the casting nozzle. Moreover, in consequence of the nozzle clogging phenomenon, molten steel flows into a mold at an uneven flow rate to cause drift in the mold, to cause a casting defect due to inclusion of mold powder and bubbles (so-called blowholes). These adverse affects obstruct the continuous casting operation and lead to deterioration in steel quality.

As measures against the nozzle clogging phenomenon, various proposals, such as the use of a material and structure intended to prevent adhesion of Al_2O_3 , have been made.

As to the use of a material intended to prevent adhesion of Al_2O_3 , there has been known a technique of inducing a reaction between CaO in a ZrO_2 - CaO - C refractory material and Al_2O_3 -based inclusions in molten steel to form a low-melting-point material, and melting a surface of the low-melting-point material in such a manner as to flow down together with the molten steel to obtain an anti-adhesion effect, as disclosed, for example, in the following Patent Publication 1.

COPY

DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name;

I believe I am an original and first inventor of the subject matter that is claimed and for which a patent is sought on the invention entitled

IMMERSION NOZZLE FOR CONTINUOUS CASTING OF STEEL AND CONTINUOUS STEEL CASTING METHOD USING SAME

the specification of which: (check one)

☐ is attached hereto.

☒ was filed as PCT international Application No. PCT/JP2004/012079 filed on August 13, 2004 and was amended under PCT Article 19 on _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information material to the patentability of this application in accordance with 37 CFR 1.56.

I hereby claim the benefit of foreign priority under 35 USC 119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below any foreign application for patent or inventor's certificate or of any PCT international application having a filing date before that of the application the priority of which is claimed:

Prior Foreign Application(s):

Number No.	Country	Filing Date	Priority Claimed	
			<u>YES</u>	<u>NO</u>
2003-298232	JAPAN	August 22, 2003		X

I hereby claim the benefit under 35 USC 119(e) of any United States provisional application(s) listed below

Application Number	Filing Date
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COPY

I hereby claim the benefit of United States priority under 35 USC 120 of any United States application(s) or 365(c) of any PCT international applications designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is disclosed in a listed one of the prior United States or PCT international application in the manner provided by the first paragraph of 35 USC 112, I acknowledge the duty to disclose information material to the patentability of this application as defined in 37 CFR 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

U.S. Parent Application or PCT Parent

Number	(Filing Date)	Parent Patent Number
PCT/JP2004/012079	August 23, 2004	

POWER OF ATTORNEY: As named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith:

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Jon A. Gibbons	Reg. No. 37,333	Paul D. Bianco	Reg. No. 43,500

Send correspondence to MARTIN FLEIT, Fleit, Kain, Gibbons, Gutman, Bongini & Bianco, P.L., 21355 E. Dixie Highway, Suite 115, Miami, Florida 33180, and direct all telephone calls to MARTIN FLEIT at (305) 830-2600.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 USC 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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INVENTOR'S SIGNATURE: Saeko Uchida DATE: Feb. 15. 2006.